

CLAIMS

We claim:

- 1 1. A vibration damper with variable damping force, comprising:
2 a working cylinder filled with damping medium;
3 a piston fastened to a piston rod arranged in an axially movable manner in said
4 working cylinder and dividing the working cylinder into two working spaces;
5 first and second non-return valves arranged in said piston for respectively
6 providing a damping force for the rebound and compression directions of the vibration damper;
7 and
8 a damping valve arranged in one of said piston and said piston rod having a
9 variable damping action and arranged in series with each of said first and second non-return
10 valves, thereby acting in both said rebound and compression directions of the vibration damper.
- 1 2. The vibration damper of claim 1, wherein said damping valve comprises
2 an externally activated actuator for adjusting said variable damping action.
- 1 3. The vibration damper of claim 1, wherein at least one of said first and
2 second non-return valves comprises an element from the group consisting of a spring lock and a
3 spring-loaded valve disk.
- 1 4. The vibration damper of claim 1, wherein a characteristic of said damping
2 valve is precontrollable to a precontrolled setting in at least one of the rebound direction and the
3 compression direction.

1 5. The vibration damper of claim 4, wherein said actuator for said damping
2 valve comprises an electromagnet.

1 6. The vibration damper of claim 1, wherein said first and second non-return
2 valves are accommodated together with their associated valve seats in said piston.

1 7. The vibration damper of claim 1, wherein said first and second non-return
2 valves are preassembled with their associated valve seats as a modular unit and are fixedly
3 connected in said piston.

1 8. The vibration damper of claim 1, wherein said first and second non-return
2 valves and said damping valve are arranged in said piston.

1 9. The vibration damper of claim 1, wherein said first and second non-return
2 valves communicate with one of said upper and lower working spaces and said damping valve
3 actuates via at least one flow connection to the other of said upper and lower working spaces.

1 10. The vibration damper of claim 9, wherein said damping valve comprises a
2 valve body that is precontrollable to a precontrolled setting in one of said rebound and
3 compression directions and directly controllable via an actuator in the other of said rebound and
4 compression directions.